EMPIRICAL ANALYSIS ON FINANCIAL PERFORMANCE OF LISTED FIRMS IN COMMERCIAL AND SERVICE SECTOR IN KENYA: CORPORATE BOARDS, DO THEY MATTER?

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Abstract

Corporate boards are tasked with overall financial performance of firms under commercial and service sector which have for decades been at the centre of driving the economies of the developing nations as evidenced through the tremendous growth in the private sector credit over time. Unfortunately, commercial and service sector in Kenya has been witnessing a slow growth for the last five years topping the list of firms selling off their assets to cater for operational expenses. To realize better and improved financial performance however, it is vital to understand the nature and composition of these boards that have shown great interest in shifting towards asset-light business models to remain afloat. These actions have left shareholders with some of the worst wealth destruction experience ever seen at Nairobi Securities Exchange (NSE). Therefore, this study aimed at establishing the empirical relationship between board characteristics and financial performance of commercial and service sector in Kenya. The study used the base data collected from the NSE reports which has all the annual reports of the listed firms under commercial and service sector as at December 2015. The study employed a panel data estimation technique with application of Hausman specification test which preferred Fixed Effects Regression Model as opposed to Random Effects GLS model in estimation. Significance was tested at 5% level. From the study results, both board size and board diligence were shown to significantly increase firm financial performance while gender diversity led to a significant decline in firm financial performance. Based on the results, the study recommends for considerable proportion of directors in board since these managers have a better appreciation of the business and can therefore make better decisions. Also, there is need for more board meetings undertaken by directors to solve emerging organizational problem as they were associated with increased financial performance and finally, firms need to set up a department which will facilitate affirmative action through research to have appropriate incorporation of both gender as it was associated with improved financial performance.

1. Introduction

Commercial and service sector play a significant role in the overall development of an economy in both short run and long run. This sector has been at the centre of driving the economies of the developing nations as evidenced by the tremendous growth in the private sector credit over time (UNCTAD, 2013). Firms mostly in developing countries rarely understood their particular needs, capacities, barriers, short and long term interest (Ikiara, Muriira, and

Nyangena, 1999). This may be attributed to reluctance, slow and apprehensive in decision-making by boards managing the particular firms. Considering investment, boards are expected to perform not just the monitoring of management but provide strategic directions especially in times of crisis.

Considering the fundamental principle of agency theory, agents act as a result of their own interest thus self- centred giving less care to interest of shareholders which ends up causing an adverse impact on the overall firm value. As long as the principal and agent utilities coincide, there is no agent problem. However, once their interests diverge, the agents will thus capitalize on their utility at the cost of the principal according to Eisenhardt, (1989). In addressing the key agency, the opportunistic tendencies of agents can be directed. For example, the theory of agency presumes management to incorporate a huge percentage of managers who are independent for active control (Coleman, 2007). Freeman, *et al*. (2004) argues that emphasis on stockholders has experienced a variation and teams of management are now supposed to take into consideration the welfares of many other investor groups. The argument now is whether to take a comprehensive or constricted focus on stakeholders. Freeman, *et al* (2004), proposed a comprehensive view while Bathula (2008) provides a close opinion implying that volunteer shareholders shoulder more or less kind of risk.

Since the 2008 Global Financial Crisis (GFC), commercial and service sector has not only been a major component of Kenya's economic growth but also has maintained its active and persistent development. Compared to the agriculture and manufacturing sectors during the same period, they have expanded by 5% annually (Serletis, 2013). This industry is composed of both medium and even small sized enterprises. The sector accounts for the largest share of employment in Kenya. The reported principal actor in this industry includes transport sub-sector and especially aviation which occupies a significant position.

Both players raise their capital in the Nairobi Stock Exchange (NSE) which was established in 1954. The improvement of the financial performance is attributed to increased attention and activities leading to upward push of the share prices (Walker, 2009). Thus the process of raising capital in the NSE allows for competition amongst listed companies. Despite this positive contribution, the sector has been dwindling at a saddening rate. All these outcomes are associated with poorly designed boards of management. However, empirical evidence provides conflicting evidence on the effect of board individualities on the general financial performance of firms. The motivation behind this study is as a result of absence of convergence. Given the importance of the councils/boards, it is vital therefore to identify and assess their impact on monetary performance of listed commercial and service companies at Nairobi Stock Market.

An Overview of Firm Governance and Performance

Board characteristics refer to features of corporate boards that are tasked with overall management of the firms. Some other studies (Dittmar & Mahrt-Smith, 2007; Abbash, 2010) refer or attribute these characteristics to the concept of corporate governance. The success or collapse of firms is thus associated with the role acted by the management and firm governance as a process. While studies (Hermalin & Weisbach, 2001; Keil & Nicholson, 2003; Lau *et al*., 2007) consider a broad variety of matters in corporate management, some process such as exposes, rights of voting, rules among others, this study gives an attention on the several features of the executives including ownership, board expertise, board diligence, size of board and gender about financial performance of firms under study.

In Kenya, the Capital Markets Authority provides revised code of firm governance (2011) to streamline characteristics of boards for companies listed on the NSE. The new regulations emphasised good governance and function of the boards however, the revision of the codes were done again in 2014, so as to be realigned with the world-wide best corporate practices. The formulated new codes are applicable to all publicly quoted firms in Kenya and all other firms that may seek to raise resources especially from say the capital markets authority of Kenya through provision of securities (Mbaru, 2008).The proposed guidelines give organizations the option of using them as specified or seek for exemption in line with industry demands (Business Daily, 2014)..

Firm performance as described by Dess *et al*., (2006) and Wachira, (2014) is attributed to the effectiveness of the firm as the myriad of inner performance outcomes normally as a result of more efficient processes and other outside actions that connect to deliberations that are extensive than those naturally allied to economic assessment either by directors, shareholders, or clients such as corporate social responsibility. According to Wachira (2014), firms can track and measure performance in several extents such as monetary performance, client service, firm social duty and even worker stewardship. A firm's financial performance could be measured by monetary changes. Companies monetary growth is reflected in its Return on investment or assets or value added among others (Oguda, 2015). In this case, profit is the decisive goal of listed firms in commercial and service sector. To gauge the company's performance/productivity, a selection of ratios are employed. Some of these steps as classified by Murthy and Mouritsen, (2011) include; Net Interest Margin (NIM), Returns on Equity and/or Assets (ROE/ROA). ROA specifically indicates the capability of the bank to create revenue by using firm assets at their exposure. ROE is a proportion in on the

balance sheet that reflects how much turnover a firm earns relating to the equivalent quantity of stockholder equity established. Further, this is what the stakeholders gets in return from the savings.

For continued business operations as well as financial capabilities Wachira (2014) emphasized on the essentiality of financial results especially in supporting firm functional strategies and making required infrastructure investments. For the last four decades, commercial and service sector has been a great contributor to the Kenya's economic growth among other significant parameters like political stability (for details see Orayo & Mose, 2016). This industry has participated not only in the GDP growth but also in the overall contribution towards wage employment and balance of payments, leading better fiscal performance (Nyag'au & Orayo, 2016).

The collapse of pronounced enterprises for over a decade ago globally has highlighted the limited role acted by the respective boards through a let-down of corporate governance processes (Muriithi, 2004; Abbash, 2010). Each wave of corporate scandals over the years has reignited the recent debate on corporate governance. For example, in 2008, the financial meltdown that was triggered by the collapse of major firms globally led to the attention on administrative wage and board independence. This heightened anxiety for accountability, controlling, transparency and which led to firm and board governance/effectiveness especially among big firm issues all over the world. The phenomenal growth exhibited by corporate investors including banks, mutual and pension funds has also increased focus on corporate boards. These established investors have the expertise to perform fiduciary responsibility of monitoring board so as to ensure good returns (Dittmar, & Mahrt-Smith, 2007). Another factor that has led to increased focus on board characteristics is the increase recognition whereby a considerate

executive team is a basis of asset in different forms including; promoting venture, improve share development as well as provision of healthier long-run stakeholder return (Forbes, & Milliken, 1999; Lausten, 2002). Both Healy (2003) and Orayo & Mose, (2016) recognize that good corporate practices are a source of economic growth. At the midst of each of these corporate indignities including corruption, there is an attribute of the ineffectiveness of boards of directors.

In Kenya, the corporate failures involving listed firms at Nairobi Securities Exchange (NSE) such as Uchumi, CMC Motors, Mumias Sugar and most recently banks such as Imperial Bank, Dubai Bank, and Chase Bank have ignited debates on functionality of boards. In Kenya, by law and practice, the committee is responsible for overseeing and directing the company and appointing management and has substantial freedom under the law to exercise or delegate that power as it sees fit. The Capital Markets Authority Guidelines recommend that the board define the company's strategy, oversee management and performance, identify principle risks and opportunities, develop remuneration and staff policy, and review internal controls and compliance (Ngigi, 2014).

Growth of Listed Commercial and Service Firms in Kenya

Commercial and service sector refers to a category of enterprises that provide services to commercial and retail customers. Some of the businesses listed under this category include Express limited, Nation Media Group (NMG); Kenya Airways (KQ); Standard Group (SG); TPS Eastern Africa, Scan Group (SG), Uchumi Supermarket (US), Hutchings Biemer (HB), Longhorn Publishers (LP) and Atlas Development and Support services (ADSS). Despite the assertion by Lawal, (2012 and Oguda, (2015) that the financial system plays a substantial function in the growth process,

particularly in the financial intermediation process, it is of great importance for boards to be re-examined and redefine their own strategies for efficiency. The fact that different firms listed in the commercial and service sector, operating in the environment of the same market and with similar regulatory provisions, produce dissimilar results can be elucidated from how they are differently governed. How these firms are managed is usually as a result of their boards, and this has produced curiosity in understanding operation or functioning of these boards. Commercial and service sector enterprises listed on the NSE are supposed to act as investing driving tools for the public, and they are expected to be professionally managed to attract investor confidence and safeguard the publics' interest (NSE, 2015).

Despite registering sharp upward development within the country, commercial and service sector in Kenya has witnessed a slow growth for the last five years (Business Daily, 2017). For instance, Kenya Airways which was formerly owned by the government and now privatized with public getting a significant portion through the Nairobi stock exchange is on the verge of demise following poor financial performance associated with the endless and unending managerial quagmires (Gichira, 2007). Similarly, Uchumi supermarket which was listed in Nairobi stock exchange and at one point was put under receivership given the poor financial performance which saw its eventual delisting for almost the same reasons (Ngugi et al., 2012). Currently Uchumi supermarkets, Kenya Airways, Express Kenya and Longhorn publishers are topping the list of other firms that have turned to selling assets to shore up their medium term performance in an operational situation that is affected by slow growth (Business Daily, 2017). Some other firms listed as commercial and service at the Nairobi stock exchange and whose contribution to the Kenya's economic growth as well as the development are

likely to be delisted as a result of the inadequate quality of service and poor marketing as well as slow technological adoption. In 2016, minority of shareholders of Longhorn publishers shot down a proposal by management to sell the firm's head office as board of management citing that the proceeds would have been invested in higher return publishing fields. The action raised more questions than answers. Could this be the best that management can offer? Little empirically has been explored to inform the falling of commercial and service sector firms into the negative equity positions as their liabilities exceed their assets. In addition to the inadequacy of studies focusing on African context, and in Kenya in particular, there is no study which is sector specific considering sector dynamism focusing on performance (financial) of companies listed in commercial and service sector. It is on this basis that this study investigates nexus of board characteristics and monetary performance of commercial and service sector in Kenya. This further steered by the fact that publicly listed companies urge to be competitive enough to ensure growth and retention of market share in the industry because this would certainly translate to increased sales and profits (Muriithi, 2004). This study, therefore, sought to respond/answer to the following questions: first, what is the pattern of financial performance across different listed commercial and service firms in Kenya? Secondly, what is the influence of board characteristics on financial growth of listed commercial and service firms in Kenya?

This study has suggestions for theory building as it contributes to the discussion on liberalization and commercialization in the commercial and service industry. The study results may contribute to the inconclusiveness and the huge controversy surrounding the debate on the performance of retail and service sectors. Further the study may assist the potential investors in the commercial and service industry to make wise decisions and avoid excessive trading and the

tendency to disproportionately hold on to losing. The study actually provides the necessary insights into what investment managers in the commercial and service sector should look for in a turbulent market when guiding their clients in constructing optimal portfolios.

2. Literature Review

The contribution and influence of boards have been considered by researchers of different disciplines including organization and management theory (Bhagat & Black, 1999; Kiel & Nicholson, 2003). The existent studies has mainly concentrated on boards features in influencing performance of companies with different findings elucidating a lot of theoretical debates. Other researchers too gave consideration to other aspects like possession (Bathula, 2008) MD turnover and remunerations (Lausten, 2002) in impacting the performance of a firm. Four main theoretical viewpoints of boards and management crescendos well-thought-out as pertinent to this research namely: the agency, theory of stewardship, theory of stakeholder as well as the resource dependence.

The Agency theory on the financial performance of an organization according to Abbash (2010) has received greater attention from academic, and practitioners contend that as companies expand in magnitude, the principals lose operative control thereby allotting experts to manage the corporate affairs. Mizruchi (1983) claim that managers steadily gain operational control over the firm. Considering the stewardship theory, managers are viewed as stewards. And as stewards, they most likely seek to maximize value for shareholders. Davis et al. (1997) argue that by maximizing value for shareholders, the stewards will attain organizational success which in turn satisfies their personal needs. The theory portends that managers are impelled by reasons that are not financial such as the requirement for accomplishment, acknowledgement and

inherent fulfilment of effective performance. On the other hand, the stakeholder theory as suggested by Jensen (2001) has not been exposed to significant empirical exploration. At the less option, two aspects may be the cause of the theoretical gap as well as evidence. To begin with, occurrence of monopoly situation as well as externalities. The other concern is the challenge of quantification, given the difficulties related to availability of an exact long-term value of the firm (Kaur, Subramaniam, & Cooper, 2013). It is argued that prominence of executive action has to be in the evolution and conservation of all interactions of the stakeholder, and not only that associated with shareholders (Jensen, 2001). Nevertheless, the stewardship theory considers the organisation of the management, the role of the Chief Executive Officer (CEO) and board size as essentials for ensuring operative company governance within any institution, (Coleman, 2007). Finally, the resource dependency theory provided a theoretical basis for the roles of the board as a resource to the company (Hillman, et al., 2000). Therefore, appointment of directors can lead to social capital and competence to the enterprise which is a valuable quality that a manager can make to the board (Stevenson and Radin, 2000). From this point of view, board inclusivity is regarded as a means that can increase worth to the firm. Resource dependency theory also adopts a broad view that expertise and knowledge of managers add to the resources meant to improved firm performance. This theory, therefore, portends that expertise as well as know-how of directors are resources that can help the firm perform better.

Considering empirical expedition, Lipton & Lorsch (1992), posits that boards that meet regularly have a higher chance of executing their duties to enhance the welfare of shareholders. The frequency of council meetings has also been found to contribute to the quality of output of audit (Carcello et al., 2002). These results were supported by Gosh (2007) who revealed that a ten percent improvement on council meetings resulted in a one percent increase in firm performance. According to Carcello et al., (2002), audit committees that meet regularly exhibit few financial statement fraud. A study conducted in Malaysia by Kaur, Subramaniam & Cooper (2013) reported a different association between diligence of board and performance of firm. This is further backed by Carcello et al. (2002) who concede that frequency of board meetings include more than board meetings which include preparation and follow up.

The independence of the managers at the board is often denoted by the number of directors who are not executive vis-a-vis that of the executive (Lawal, 2012). Despite the argument that managerial and non-managerial individuals have pros as well as cons, the majority of researchers favour independent directors. This is because of the perceived benefit that independent directors provide management due to their independence (Beasley, & Salterio, 2001). Independent directors contribute to impartiality in board's strategic decision making including providing independent oversight of the management. Although the independence of boards is considered a key factor, there is absence of facts that board independence is directly linked with firm performance (Adams et al., 2010). Board independence on the other hand could have a negative correlation with the firm performance. It is critical to note that from recent research, board independence had an impact of increasing the cost to a company which could be due to communication breakdown (Adams & Fereira, 2009). The effect of board independence on financial performance is, however, inconclusive according to Davidson III & Rowe, (2004). A challenge in gauging the link between independence of managers and firm performance is that their relationship is endogenously determined (Hermalin & Welsbach, 2001).

Yusoff and Fauzia (2010) describe board expertise as the individual skill and knowledge

of individual board member, and this could have developed from education and various experiences. The combined expertise and knowledge of the members is an intangible asset of the board and is a proxy that is associated with firm performance (Hillman and Dalziel, 2003). The expertise of a board member is essential in decision making. For instance, oversight role can be successfully implemented if the board members are qualified and experienced. Some studies established a positive correlation between expertise of the board members and firm performance (Dalton et al., 1999). Experienced and qualified members of the board would be able to stimulate the boards to consider more alternatives when reviewing different positions. Agrawal and Chadha (2005), found out in their study that boards with higher levels of expertise exhibited reduced incidences of restated earnings. On the other hand, some other studies have however found an inverse relationship between skills of the board of directors and performance of the firm. In a survey carried out by VanNess et al., (2010) on board structure and firm performance, it was found that the expertise at the board negatively correlated with the company performance. Similarly, Gentebein and Voltante (2012) focusing on firms in Switzerland, reported an inverse link between firm performance and expertise of the board. In West Africa, Ehikioya (2009) explored firms approximately 107 quoted in the Nigeria Stock Exchange between 1998 and 2002. From the empirical investigations, the study exposed no evidence to support the effect of board structure on firm performance. There is however high positive correlation between duality of CEO and firm performance in Nigeria although Leverage ratio of the firm as well as the size contributed to firm performance. Mak & Kusnadi (2005) support that evidence that board size significantly improves organizational performance.

Adams & Ferreira (2009) are concerned by the low representation of women at the board. A number of countries are enacting laws to foster increased participation of women. The argument on the table involves a presumption of existence of a positive relationship between women board representation and firm performance. According to Carter et al., (2003) and Campbell and Minquez-Vera (2008) a higher percentage of female directors on the board correlate with improved firm performance however, this is in contrary with Ahern & Dittmar (2012).

In Kenya, Miyienda et al., (2012) explored the relationship between performance and director remuneration in the NSE between 2006 and 2010. The findings showed a positive link between financial performance and remuneration of the board; however, there was a weak association with Tobin's Q and ROE, but a moderately strong relationship with earnings after taxes. The board composition and monetary performance of all listed firms at the Nairobi Securities Exchange was explored by Wetukha (2013). A positive association between board independence, board size and duality of CEO and financial performance of companies listed in the NSE was revealed. Aduda, Chogii, and Magutu (2013) explored competing firm governance theories on the performance of firms in Kenya. From the findings, board composition variables are significant predictors of firm performance. Similarly, Ogeno (2013) examined the effect of board characteristics on the financial performance of companies listed in the allied and manufacturing sector of the Nairobi Securities Exchange. The author showed that board independence has a significant and negative relationship with financial performance while board diversity was found to have a significant positive effect on financial performance.

Ombaba (2016) studied the board diversity and financial performance of listed firms in Kenya. The study found positive significant relationship between board independence and gender and financial performance. The study established that board tenure to be negatively significant with

firm performance.

In conclusion, both theoretical underpinnings and empirical evidence explored in this study come to an agreement that the top management teams (boards) who are agents are tasked to make strategic decisions on behalf of the stakeholders. According to Lewis (2004) the products of their decision making ultimately influence firm performance. However, the majority fail to debate appropriate courses of action sufficiently. Wachira (2014) refers this as a subtle paradox which is embedded in the nexus between their composition and organizational performance in that case. Finally, apart from the fact that sector specific studies are hardly present, studies conducted and associated to the board management with its respective features and performance of firm(s) have been, however, inconclusive in nature. For example some established limited proof (Weir and Laing., 1999; Weir, et al., 2002) to propose that these characteristics influence performance of the firms. In addition, other studies, there is sufficient proof to back the argument that certain features of board impact on performance of the firms (Bhagat and Black, 1999; Kiel and Nicholson, 2003; and Bonn, 2004; Ogbechie et al., 2009; Ongore, 2011). This study thus focused on the board characteristics and financial performance of firms enlisted in commercial and service sector in Kenya. These features include board size, board diligence, board expertise, board independence and gender diversity as revealed in several studies (Carter et al., 2003; Miyienda et al., 2012; Wetukha, 2013; and Aduda, Chogii and Magutu, 2013). However, firm size, firm age, and firm leverage were also shown to be associated with company financial performance and were thus included in this study as intervening firm characteristics.

3. Research Methodology

Research Design and Target Population

A descriptive and correlational approach was used to provide empirical evidence. The method is preferred as it allows the researcher to draw inferences about cause and effect. The study assumes the condition of causal relationship whereby the dependent variable (ROA) is regressed into independent variables (Size of the board, board diligence, board independence, the expertise of board and gender diversity). The population consists of all the companies under commercial and service sector listed on NSE as at 2015 which were ten by then but one (Uchumi Supermarkets) had no full information. Publicly traded commercial and service companies were chosen for this study because these firms are considered as the leading firms in Kenya. These companies potentially attract experienced and skilled individuals to their boards. The publicly listed company was preferred due to the availability of enough data that can be analysed for this study.

Data Source and Analysis

This survey utilized secondary data from the NSE yearly reports whereby the specific information was collected from the identified commercial and service firms listed for the recent period from 2011 to 2015. The data for the study was a combination of cross sectional and time series data. Companies under this sector that do not have information on some key variables as stated earlier were excluded from the study. The NSE data was analysed using descriptive and inferential statistical approach.

Different statistics that was applied to analyse the quantitative data include; mean, standard deviation and the range. Tables and figure were also used to summarize responses for further analysis and facilitate comparison. The unity of analysis was at the firm level that is listed in the

Nairobi Securities Exchange. Specifically, the study applied multiple liner regression analysis to find the relationship between financial performance and board characteristics and to identify the direction of the relationship.

Model Formulation and Diagnostic Tests

The study permits all explanatory variables to be considered in the model due to their main focus

$$FP_{it} = \beta_0 + \beta_1 BI_{it} + \beta_2 BS_{it} + \beta_3 BE_{it} + \beta_4 BD_{it} + \beta_5 G_{it} + \beta_6 FA_{it} + \beta_7 FS_{it} + \beta_8 FL_{it} + \varepsilon_{it} \quad \text{...................1}$$

Where:

FP is financial performance of the firm (ROA); BI is the Board Independence; BD is the Board Diligence; **BS** is the Board Size; **BE** is the Board Expertise; **G** represents Gender Diversity; **FA**=firm age; **FS**= firm size and **FL**=firm leverage; β_0 is the constant coefficient and β_1 *to* β_8 are the coefficients for respective variables while ε_{it} is the error term.

Table 1: Firm Performance, Board and Firm Characteristics

Variable Name	Operationalization of the variables
Dependent Variable	
Return on Assets (ROA) (ROA)	This is a ratio of net income to total assets of a firm
Explanatory/Independent Variables	
Board Independence	The number of non-executive directors on the board relative to the total number of directors.
Board Size	Total number of directors serving on the board of directors
Board Diligence	The frequency number of meetings held during a year for the board directors
Board Expertise	The number of different professions of members in the board
Gender Diversity	The number of women directors on the board.
Control Variables	
Firm Size	The natural log of total assets.
Firm Age	No of years of a firm since incorporation
Leverage	Ratio of debts to firm's total assets

Source: Author based on the literature

The study used a panel data estimation technique because of its several advantages that is it has a greater degree of freedom and less multicollinearity leading to more efficient estimates, (Hsiao, 2003) and gives greater flexibility in modelling differences in behaviour across the firms under study which enables us to control for unobserved heterogeneity.

The panel data analysis method has two main approaches, namely; the Fixed Effects Model (FEM) and the Random Effects Model (REM) Hausman test was conducted so as to choose between the fixed and random effects. It examines correlation of the different errors with the explanatory variables (Greene, 2008). The specified model was thus be estimated using statistical program (STATA) and the study objects was investigated through regular tests. Other primary assumption that was examined before the econometric estimation include unit root test. Before assumptions testing, the study investigated the presence of multicollinearity and outliers. For Unit root test, the study used Levin Lin Chu unit root test (null and alternative

hypotheses were stated as; Panels contain unit roots and Panels are stationary, respectively) on the other hand the correlation matrix was used to determine if any pair of independent variables was highly collinear through the magnitude of the correlation coefficient of the pairs of variables established.

4. DATA ANALYSIS, RESULTS AND DISCUSSIONS

Since the data took panel dimension, a total of nine firms sampled on board characteristics and respective financial performance of a firm. A comprehensive fundamental and technical analysis is undertaken in exploration of board characteristics on significance of exogenous and endogenous factors relating to the expected returns from the stock market and the nature of such causation among the nine listed commercial and service firms.

Descriptive statistics

The study considered descriptive statistics for overall panels. Table 2 depicts ROA of an average of 0.0486 points with a minimum of 0.008 points and a maximum of 0.223 points. Board size and board independence were on average 10.22 and 7.42 with a standard deviation of 21.3 and 1.8 respectively. The board with the least number of individuals had 7 directors while the board with maximum number of individuals had 13 directors. Considering, different professions represented in the board, it was found that professionals ranged between four and seven. The average number however was at least 5 among firms listed under commercial and service sector. Similarly, on board diligence, the results show that approximately 8 board meetings were held per year. The highest number of board meetings was 33 while other firms held only 4 boards meetings. Table 2 shows more other features (including standard deviations and range) for other variables under study.

Table 2: Summary Statistics

Variable	Mean	Std. Dev.	Min	Max
ROA	0.0486	0.0474	0.008	0.223
Board Size	10.2222	1.3123	7	13
Board Independence	7.4222	1.8277	4	11
Board Expertise	4.9556	0.6013	4	7
Board diligence	8.3333	5.4564	4	33
Gender Diversity	1.8444	1.1472	0	5
Firm Size	18339.9	12541.36	4807.948	57949.86
Firm Age	55.7778	25.3735	16	100
Firm Leverage	0.5044	0.1767	0.235	0.837

Total Observation = 45

Further technical analysis on the return on assets is conducted to investigate the pattern of firms listed under commercial and service sector as indicated earlier. From the graphical analysis (figure 1), nation media, scan group and standard group were shown to possess similar characteristics such that their ROA increased at a decreasing pace over time. On the contrary, express limited, Kenya airways and TPS Eastern

Africa decline with a decreasing rate. Further, Longhorn publishers and atlas development and services were shown to maintain constancy over the study period. Hutchings Biemer only indicated a symmetrical increase and decrease during the study period. For more details, see figure 1 indicating the trends of financial performance of some selected commercial and service firms at NSE as at December 2015.

Figure 1: Graphical scrutiny of financial performance of Listed Commercial and Service Firms in Kenya
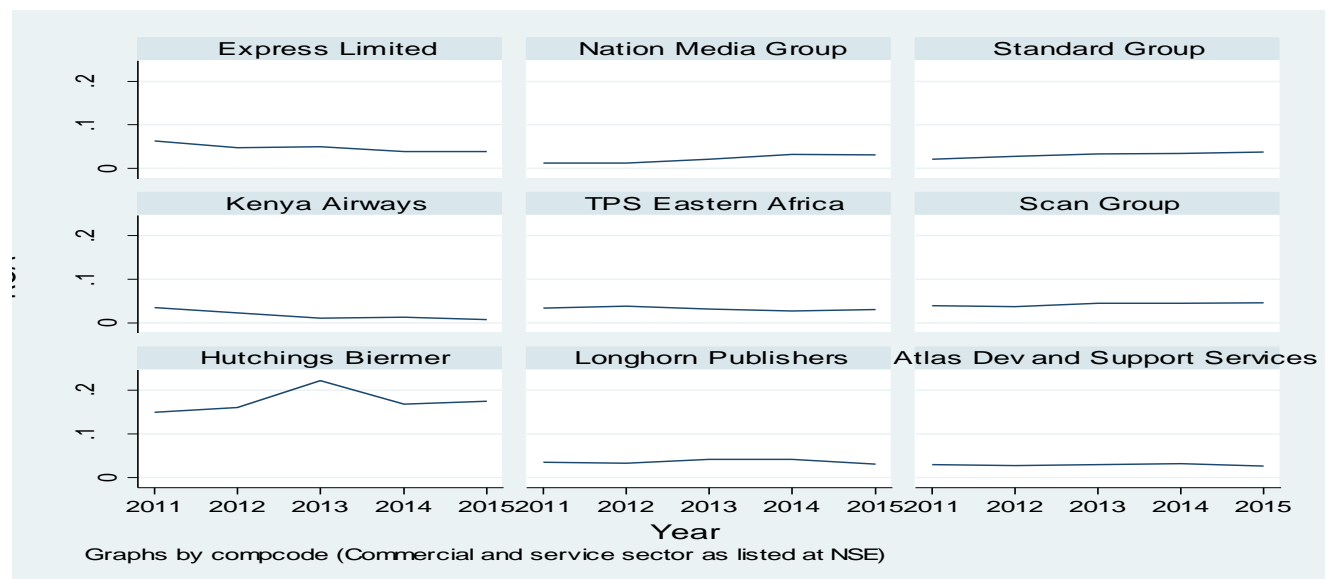
Source: Stata output based on author's computation

Empirical Model Estimation

The study elucidates the contribution of the size of a board, board independence, board expertise, board diligence and gender diversity on financial performance of listed firms at NSE. The descriptive statistics show how variations across panels and among the parameters elucidate this predisposition. In this objective, the study mainly concentrates on exploring how the said variables with their stochastic nature relate with financial performance of the firms under study. The conceptualized model was estimated by fixed effects regression with pre-estimation of multicollinearity, unit roots and Hausman model specification test. Correlation analysis was used to establish the extent of the correlation of different pairs of variables under study. It measures/calculates the correlation coefficient between 1 and -1.

Table 3: Correlation Matrix

Variables	ROA	Board Size	Board Independence	Board Expertise	Board Diligence	Gender diversity	Firm Age	Firm Leverage	Firm Size
ROA	1								
Board Size	0.0922	1							
Board Independence	0.0007	0.782*	1						
Board Expertise	0.0652	0.7805*	0.572*	1					
Board Diligence	-0.0926	0.3285	0.2958	0.3068	1				
Gender diversity	0.1159	0.6386*	0.4907	0.5139*	0.3516	1			
Firm Age	-0.2289	0.3665	-0.4154	-0.1384	-0.1046	-0.2148	1		
Firm Leverage	-0.1688	0.2309	0.0933	0.1956	0.2022	0.1418	-0.0001	1	

| Firm Size | -0.1053 | 0.1621 | 0.0532 | 0.1518 | 0.0888 | 0.1977 | -0.1585 | 0.3923 | 1 |

*Source: Author's computation. *Highly correlated pairs* (r²=/>0.5)

Levin-Lin-Chu unit-root test (Table 4), revealed p values of less than level of significance of 0.05 for all variables implying rejection of the null hypothesis (that the variables had unit root).

Table 4: Levin-Lin-Chu Unit-Root Test

Variables	Unadjusted t-statistic	P value at lag(0)
ROA	-28.2947	0.0000
BD size	-20.7370	0.0000
BD independence	-17.0413	0.0000
BD expertise	-15.8846	0.0000
BD diligence	-6.1223	0.0004
Gender diversity	-8.8886	0.0011
Firm size	-36.7598	0.0000
Firm age	-7.8976	0.0000
Leverage	-9.5e+02	0.0000

Source: Author's computation. Significance pegged at 5% level.

In order to determine the best fitting model of firm performance, this study adopted Hausman specification test where the fixed effects model specification was compared to the random effects model. According to Woodridge (2004) under fixed effects, there is an assumption that all the dispersion in observed effect is due to sampling error whereas under random effects, there is allowance that some of the dispersion observed may illustrate real differences in effect of size across firms (Baltagi, 2005), in this case listed firms under NSE. The null hypothesis was that the differences in estimates are not systematic. Consequently, on conducting the test, it was shown that P-value of 0.0001, at 0.05 level of significance, implied that the individual level effects are best modelled using the fixed effects (FEM)[1] method. See table 5 for more details.

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[1] Despite varied information about a different effect size for each commercial and service firm represented in the study, it was thus necessary to ensure that all these effects size are represented in the summary estimate.

Table 5: Test for Model Selection: REM versus FEM

	Coefficients			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	random	fixed	Difference	S.E.
B_Size	.0010251	.0067769	-.0057517	.0068399
B_Independ~e	-.0067431	-.0052747	-.0014685	.
B_Diligence	-.0013178	-.0001265	-.0011913	.0008365
B_Expertise	.0205205	.0001781	.0203424	.0076025
B_gender	-.0140035	-.0006503	-.0133532	.
Firm_Size	2.38e-06	1.69e-06	6.87e-07	5.60e-07
Firm_Lever~e	.016042	.0176518	-.0016099	.0192981
Firm_Age	-.0012502	-.0040182	.002768	.

```
                    b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

            chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                    =        33.28
            Prob>chi2 =      0.0001
            (V_b-V_B is not positive definite)
```

Source: Stata output based on Author's computation

Regression Results for fixed Effects Model

The adoption of fixed effects model was based on commercial and service firms established to be sharing the common effect size in terms of financial performance and the core objective of establishing the contribution of board characteristics on firm financial performance. Note that in this model, it is assumed strict exogeneity as suggested by Anderson and Hsiao, (1982). This study also concurs with Bertrand and Schoar (2003) that sometimes explicitly estimating fixed effects can be useful because the fixed effects can inform about parameters of interest. Table 6 indicates the results of the estimated model.

Table 6: Results for Fixed-Effects (within) Regression Model

```
Fixed-effects (within) regression          Number of obs      =        36
Group variable: compcode                   Number of groups   =         9

R-sq:  within  = 0.5981                     Obs per group: min =         4
       between = 0.1039                                    avg =       4.0
       overall = 0.0882                                    max =         4

                                           F(8,8)             =   8074.09
corr(u_i, Xb)  = -0.8551                    Prob > F           =    0.0000

                        (Std. Err. adjusted for 9 clusters in compcode)
```

ROA	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]	
B_Size D1.	.0064913	.0020884	3.11	0.014	.0016755	.0113071
B_Independence	.0057237	.0075829	0.75	0.472	-.0117625	.0232099
B_Diligence	.0006849	.0002571	2.66	0.029	.000092	.0012778
B_Expertise D1.	-.0011497	.0047237	-0.24	0.814	-.0120426	.0097432
B_gender	-.0167918	.0071784	-2.34	0.047	-.0333453	-.0002384
Firm_Size D1.	5.21e-06	1.83e-06	2.85	0.022	9.92e-07	9.43e-06
Firm_Leverage D1.	-.0189898	.0183046	-1.04	0.330	-.0612004	.0232208
Firm_Age	.0024964	.0018777	1.33	0.220	-.0018337	.0068264
_cons	-.1223065	.1203559	-1.02	0.339	-.3998477	.1552346
sigma_u	.09445248					
sigma_e	.00811182					
rho	.99267819	(fraction of variance due to u_i)				

[2]

The results in Table 6 shows the total variations of 8.82% explaining financial performance of firms while the other proportion may have been factored in by other factors not considered by this study. Also, 10.39% of the variations explain firm financial performance in between the panels and approximately 59.81% of the variations explain firm financial performance within the panels. Despite low variations (Overall variation) in respective panels which is expected due to cross sectional component, the study revealed overall significance of 0.0000 which means that all variables (board characteristics) utilized in the model were statistically significant at the selected significance levels (0.1, 0.05 and 0.01 in explaining the financial performance of listed commercial and service firms at NSE. The final estimated model is as indicated below;

$$FP_{it} = -0.1223 + 0.0065BS_{it} + 0.00068BD_{it} - 0.0167G_{it} + 5.21e^{-06}FS_{it} \ldots\ldots\ldots 2$$

Further, the results specifically indicated that the coefficients of the board size, board diligence, gender diversity and firm size as being statistically significant in influencing firm performance at NSE since their t statistics were 3.11, 2.16, 2.34 and 2.85, respectively and none of their confidence intervals included zero. However, board independence, board

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[2] D1 represents first difference

expertise, firm age and firm leverage were found to be statistically insignificant in influencing financial performance of commercial and service firms at NSE. This was after their respective p value exceeded the selected significance levels. Also, the standard deviation of residuals within groups and between groups were 0.0945 and 0.0081 respectively. Variance attributable to the differences across the panels was 0.9927. However, there was absence of correlation between the stochastic term and the regressors.

Due to time series component, the fixed effects model makes assumptions on normal distribution of the stochastic random error term, linearity, constant variance of error terms across observations and no serial autocorrelation of the error terms. However, regarding heteroscedasticity and autocorrelation, Waldinger (2011) suggests that standard regression packages (such as STATA) has the ability of adjusting the standard errors automatically if one specifies a fixed effects model. This implies that panel data approach takes care of the presence of varying variance of the stochastic terms across all the observations in the panels and any suspected or proved correlation between random error terms of the subsequent time periods.

To proceed with estimation, this study applied the Shapiro Wilk test for normal data or distribution of the stochastic random error terms and was found that the overall residuals of the variables were normally distributed. The p-value of the residuals was 96.85% exceeding 5% level of significance implying that the null hypothesis of normality of residuals is not rejected. Therefore, data was normally distributed.

On linearity, the study adapted scatter plot to these effects. The scatter plot of estimated residuals square against the fitted values is shown in figures 2 below. It can be observed that the plots are fairly symmetrical around 45 degree lines which imply that when making unusually large or small prediction, the model fails to make systematic errors.

Figure 2: Graph of Residual Squares against the fitted values of Firm Financial Performance
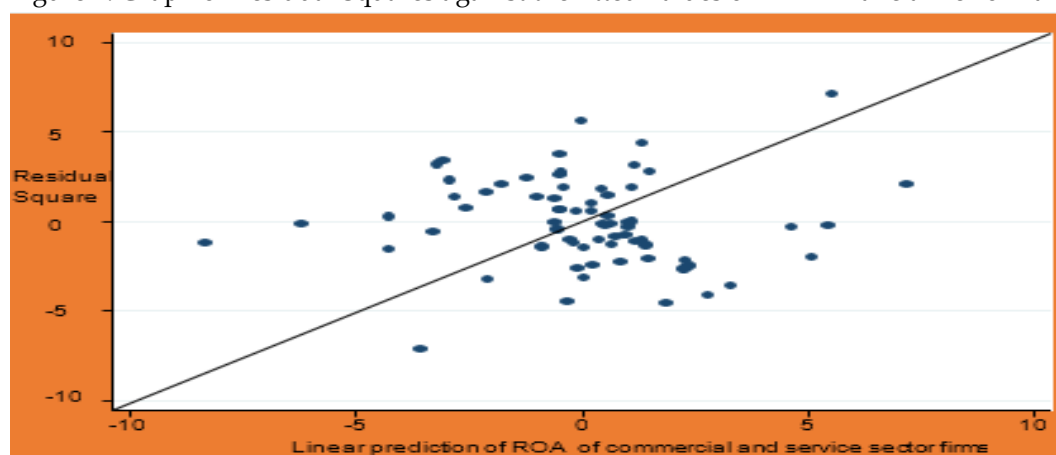
Discussion of the findings from fixed effects regression model

Upon specifying the fixed effects model, the findings are ready for discussion. The study explores significant board characteristics only as revealed in Table 6. The insignificance board characteristics are not discussed as they do not contribute to any working policy in this study.

From the results, if all factors were kept constant, firm financial performance would be less by 0.1223 points. Board size was also shown to significantly increase firm financial performance at 5% significance level by 0.65% holding other board and firm characteristics constant. As explored in theories considered in this study, the stewardship theory reflects board size as essential elements for

safeguarding actual corporate authority within any organization (Coleman, 2007). This finding concurs with the study results of Bathula (2008) and Wetukha (2013) who established a positive association.

The strength of board initiatives that is a relevant board attribute measured by the number of executive meetings held by the firm is meant to improve productivity. From the study findings revealed that board diligence significantly improved financial performance of the firm whereby at 5% significance level, an additional board meeting led to a significant rise in the financial performance of the firm by 0.068% holding other board and firm characteristics constant. This may be attributed to the fact that boards that meet regularly have a higher chance of executing their duties in line with the interests of shareholders. This result concurs with the findings of Carcelo, et al., (2002) who showed that the occurrence of board meetings contributed to the quality of output of audit. The regular meetings by firm committees exhibit few financial statement fraud. Further, Carcello, et al., (2002) and Gosh (2007) also showed that an increase in board meetings led to improved performance of the firms. On the other hand, representation of women at the board level is still low (Adams &Ferreira, 2009). Gender was also revealed to have a significant but inverse relationship with financial performance of the firm. Firms with more number of women representatives on the board led to a significant decline at 5% level of significance by 1.68% holding other board and firm characteristics constant. This is contrary to the study results obtained by other scholars who revealed that a higher percentage of women have had a statistically significantly positive effect (Erhardt et al., 2003; Campbell and Minquez-Vera, 2008; Adams & Ferreira, 2009) while it concurred with other studies that showed an inverse relationship (Ahern & Dittmar, 2012).

5. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The board defines the company's strategy, oversees management and performance, identifies principle risks and opportunities, develops remuneration and staff policy, and reviews internal controls and compliance. Despite existence of working framework, a recent global competitive report ranked Kenya lowly on governance and accountability, competitiveness, and investor protection thus an indication of a need for a serious need to push forward on corporate governance reform. The empirical results revealed that board characteristics have an effect on firm financial performance. The findings relating to size of the board can also be interpreted in relation to the stewardship and resource dependency theory that views number of directors on board as a technical resource that increases value of the firm and that they bring resources to the firm. Secondly, another positive relationship exhibited by board diligence implies that lessons learnt from within and outside the firm are integrated more often. This improves the financial well-being of the firm. Finally, gender diversity with the representation of the women surprisingly lowered firm financial performance significantly (Negative significant relationship). It was further revealed that board independence and board expertise were statistically insignificant in influencing financial performance of commercial and service firms at NSE whereas apart from firm size, firm age and firm leverage were not significant intervening variables.

In addition to providing support to existing theories, this study has empirically contributed knowledge where most studies present conflicting evidence with regard to clear role of distinguishing board characteristics. However, major challenges still remain on weak corporate governance practices as revealed through board characteristics that have seen the firms perform poorly in international comparative

rankings of governance and competitiveness. In this regard, this study proposes strong policies on size of the boards, frequency of board meetings and review of the role of gender diversity to firm growth and development.

Recommendations

In Kenya, by law and practice, the board is responsible for overseeing and directing the company and appointing senior management, and has substantial freedom under the law to exercise or delegate that power as it sees fit. Based on the estimated model, there is a need for the government to consider re-evaluating the size of their boards by emphasising on considerable number of directors so as to generate better outcomes. This should be in tandem with the structures of their day to day running of the operations. The empirical findings also support stewardship theory who argued that from the theoretical perspective, superior performance of the firm had higher likelihood of having a large proportion of directors (managers) in board since these managers have a better appreciation of the commercial activities and can therefore make informed decisions.

The study also recommends an increase in the number of consultations held by the board of directors since board diligence was associated with increased financial performance. Also it is of essence to consider the fact that too much of these meetings by board members may negatively hinder performance generally. However, increase in the number of the meetings with regard to pertinent issues affecting company will positively influence its financial performance. Frequency of board meetings despite requiring more resources may give directors enough time to deliberate on various aspects effecting firms and thus

provide solid and valid conclusions that may impact on the financial performance of the firms under commercial and service sector. These firms need to set up a team which will facilitate research to keep firms up to date on role of gender diversity characteristics. This will reverse the negative trends or impacts experienced from the estimated findings. Actually, a more varied board of directors enhances good understanding of markets that are differentiated in terms of growing creativity and innovativeness, improved decision-making provided evaluation of more other alternatives. This also need to be done with a consideration of selecting a more productive members of the board and improve the image of the firm. This may further minimize overhead costs of meeting governance requirements as described in the constitution and thus reverse the negative trends in terms of financial performance.

Areas for further empirical study

This study mainly focused on board characteristics with regard to their potential influence on financial performance of listed commercial and service firms in Kenya. Similar studies are required covering commercial and service firms across East Africa and even showing comparisons with respect to these characteristics. There is also a need for more studies of the same nature utilizing other indicators like political instability and corruption, factors which are more pronounced in Africa continent given weak judicial and social structures. Finally, there is a need to contemplate on more other measures of financial performance for inter-sectoral comparative purposes to reconnoitre the effect of various parameters of board characteristics.

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